



# Demystifying the Specific Carbohydrate Diet

By: Lindsay Rypkema, RD, CSP, CLEC

# Objectives

- Gain a better understanding of the Specific Carbohydrate Diet including purpose, guidelines, and available resources
- Review past and present literature
- Discuss possible concerns with diet and personal patient experience

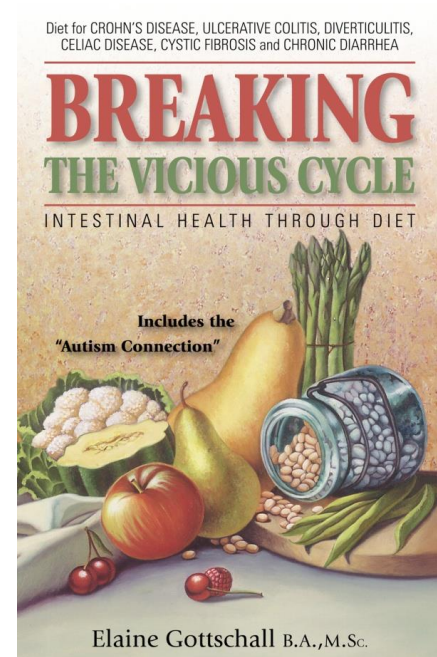
# What is the Specific Carbohydrate diet?

- Commonly referred to as SCD
- Claimed purpose: Restricts specific carbohydrates that could be malabsorbed, cause bacterial dysbiosis which in turn contributes to intestinal inflammation and worsening symptoms of IBD
  - “Never eat something your body can’t digest”
  - Allows monosaccharides
- Claims to be helpful for Crohn’s Disease, Ulcerative Colitis, Celiac Disease, Cystic Fibrosis, Diarrhea, Candidiasis, Autism
- “Early man foods prior to beginning of agriculture”



# SCD Background & Resources

- SCD originated by Dr. Sydney Valentine Haas
  - Book – Breaking the Vicious Cycle: Intestinal Health Through Diet
    - Written by Elaine Gottschall
    - <http://www.breakingtheviciouscycle.info/>
  - Recipes for the Specific Carbohydrate Diet
    - By: Raman Prasad
  - Eat Well, Feel Well
    - By: Kendall Conrad
- [scdlifestyle.com](http://scdlifestyle.com)
  - [scdrecipe.com](http://scdrecipe.com)
  - [scddiet.org](http://scddiet.org)
  - [againstallgrain.com](http://againstallgrain.com)
  - [scdsuccess.com](http://scdsuccess.com)
  - [nomorechrons.com](http://nomorechrons.com)



## “Legal/*Illegal*” Foods on SCD Diet”

- Fruit – fresh or canned in own juice, prunes, raisins
  - ***Illegal***: plantains, canned fruit with added sugar or flavoring
- Vegetables – fresh or frozen
  - use caution with gas forming such as cabbage & sauerkraut
  - ***Illegal***: canned vegetables, water chestnuts
- Meat – all fresh or frozen with no processing or additives
  - ***Illegal***: smoked meats, processed meats (preservatives)
- Eggs
- Dairy
  - Cheese
    - can't be processed & need to be aged at least 30 days
    - only use occasionally – Brie, Blue, Cheddar (freely), Gouda Gorgonzola, Havarti, Monterey Jack, Swiss (freely), Parmesan
  - SCD yogurt – see recipe online
  - ***Illegal***: fluid milk, feta, ricotta, mozzarella, commercial yogurt, cream cheese, cottage cheese

## “Legal/*Illegal*”

- Legumes (after 3 months) lentils, split peas, beans (navy, kidney, lima, black)
  - ***Illegal***: black eyed peas, chick peas, garbanzo beans, pinto beans, soybeans, jicama
- Nuts – almonds, hazelnuts, macadamia, peanuts in the shell, pine nuts, pecans, walnuts, cashews
  - ***Illegal***: sesame seeds, seed butters, flax seed, shelled peanuts
- Fat – oils, butter, fresh coconut, natural peanut butter
  - ***Illegal***: margarine
- Seasoning - all spices (need to be single ingredient or fresh), horseradish sauce (if homemade), jalapeno, mustard, tabasco sauce (specific brands), wasabi if no fillers

## “Legal/Illegal”

- Drinks – almond and coconut milk (after six months), weak coffee, aspartame sweetened drinks (1x week if symptom free), grapefruit/grape/cranberry juice if diluted with no sugar added, orange juice (fresh), tea (black, spearmint, peppermint, weak green), alcohol occasionally (bourbon, vodka, whisky, very dry wine)
  - **Illegal:** most commercial juices, instant coffee, apple juice, pineapple juice, lactaid milk, cow’s milk
- Sweeteners – Aspartame, honey, Saccharine,
  - **Illegal:** Agave, sugar alcohols (Sorbitol), Stevia, Sucralose

## “Illegal Foods” continued...

- Grains: Quinoa, rice, rye, bulgur, wheat, barley, oats, pasta, potatoes, soybeans/products, yams
- Baking powder, maltodextrin, sorbitol, mannitol, xylitol, MSG, sulphates, pectin, and natural flavors





## Potential complications with SCD

- Restricted calories if picky eater
- Food preparation time
- Stress between patient and family
- Nutritional Deficiencies (Calcium & Vitamin D)
- Strictures with high fiber

Let's Talk Milk!



## High Calorie Options

- Add almond butter, peanut butter, oil, avocado, cheese, honey to food
- Beans, lentils, and higher fat meats
- Shakes made with honey, fruit, yogurt, and coconut milk
- Muffins, breads, desserts – recipes online ([nomorechrons.com](http://nomorechrons.com))
- Coconut as milk or made into ice cream
- Trail mix with raisins



# Nutritional Therapy for Crohn's Disease

Presented at Fourth Annual Symposium on Alternative Therapies (March 28, 1999 by Leo Galland, MD)

- Sample
  - 20 patients with Crohn's disease followed 6 months – 8 years
- Method
  - Labs: CBC, sedimentation rate, serum albumin – retested at 3 month interval
  - Symptoms reviewed: diarrhea, abdominal pain, fever, fatigue, blood or mucous in stool, weight loss
  - Initial phase of treatment was SCD diet x one month
  - Further diet restrictions if <50% reduction in symptoms after one month
    - Further restrictions included reduction in dietary yeast and monosaccharides; avoidance of all nuts; addition of rice and potatoes
    - After 30 days of further restriction, fish oil was started and if symptoms persisted glutamine and aloe were started
  - Anti-microbial drugs used as needed

# Nutritional Therapy for Crohn's Disease Continued.....

- Results

- 11 responded to initial phase of SCD diet and all 20 had decrease in symptoms and medication use
- 6 patients in complete remission with no medications and remained in remission for 5-80 months
- 1 patient who had daily fevers, bloody diarrhea x 6/day, Albumin of 2.6 who was unable to obtain remission despite using steroid and immunosuppressive therapy achieved complete clinical remission in 60 days that lasted three years
  
- Consensus: Diet therapy produced reduction in symptoms and use of medications as well as induced remission although it should be noted that all patient were on standard drug therapy. More studies are needed to determine if diet therapy can be first line treatment.

# Nutritional Therapy in Pediatric Crohn's Disease: The Specific Carbohydrate Diet

*Journal of Pediatric Gastroenterology and Nutrition*

Suskind D, Wahbeh G, Gregory N, et al.

- Sample/Method
  - Retrospective chart review that included 7 patients on SCD diet and no immunosuppressive medication with Crohn disease
    - Seattle Children's Hospital from January 2005-December 2012
  - Average age of patients was 11.3 years (5 males and 2 females)
  - Medication during diet: 1 patient was on standard treatment (Mesalamine), 2 took OTC supplements, 4 on no medications
  - Duration of diet therapy ranged from 5-30 months with average of 14.6 months
  - Labs reviewed: serum albumin, CRP, Hct, Stool Calprotectin
  - Varying disease severity although none had strictures
    - Based on biopsies 2 had mild disease, 3 with moderate disease, 2 had severe disease

# Nutritional Therapy in Pediatric Crohn's Disease: The Specific Carbohydrate Diet – Continued....

- Results:

- Symptoms improved in all patients by three months after starting diet and resolution remained through all of follow up
  - Exact timing unknown per chart review
- All patients had increase in weight and height
- Labs: albumin normalized in 5 patients, CRP normalized in all that had been elevated; anemia resolved in 4 patients with prior low Hct
  - Stool calprotectin (4 of 7 checked and all trends improved although not necessarily normalized)
- Consensus: SCD may be a therapeutic option but more prospective studies are needed

# Clinical and Mucosal Improvement With Specific Carbohydrate Diet in Pediatric Crohn Disease

*Journal of Pediatric Gastroenterology and Nutrition* 2014

Cohen S, Gold B, Salvatore O, et al.

- Sample/Method

- Eligible patients: active CD
  - 9 patients completed 12 week trial with average age 13.5 years
  - Average disease duration of 3.2 years (3 new diagnosis who were medication naïve; 6 known diagnosis who were flaring
  - PCDAI  $\geq 15$  (Mild disease = 15-30 and moderate disease =  $>30$ )
- Excluded if intestinal obstruction, motility disorder, prior abdominal or GI surgery, diabetes

## Sample/Method Continued...

- Capsule endoscopy at initiation to assess inflammation & lesions
  - Assigned a Lewis score
- Collected at week 0, 12, and 52
  - Demographics, labs (CBC, sedimentation rate), metabolic profile, 3 day food record, clinical information, PCDAI, Harvey-Bradshaw Index
- No changes or additions to medication regimen
  - 4 patients on Immunomodulators
  - 1 on Mesalamine
  - 1 on Budesonide
- Supported via phone by dietitian and coordinator



## Results

- 33% patients lost weight despite consuming 100% estimated needs which was greater than prior to study
- Improvement in Hemoglobin, WBC, Erythrocyte Sedimentation Rate, and Albumin although none were statistically significant
- HBI (Harvey-Bradshaw Index) decreased from 3.3 → 2 (both indicate remission)
- PCDAI decreased from 21.1 → 7.8 (mild → remission)
- Lewis Score decreased from 2153 → 960 with 3 patients decreasing to <135 which represents normal intestinal mucosa

## Results continued....

- 6 patients were in clinical remission at 12 weeks with sustained remission in 6 of 7 who continued diet x 1 year
- Results revealed continued improvement of HBI and PCDAI scores
- No patients required medication adjustments
- At 1 year – the Lewis Score rose above the 12 week level for 4 patients, 2 showed further mucosal healing, and 1 showed mucosal improvement
- Consensus: Study revealed statistically significant mucosal healing and clinical improvement in the majority of patients who continued following SCD x 52 weeks.
  - Larger studies needed with control group

# Specific Carbohydrate Diet as Maintenance Therapy in Crohn's Disease

- ▶ **Active** Research Study through Stanford (April, 2012-expected study completion July, 2015)
- ▶ Study Design/Method (observational, prospective)
  - ▶ New diagnosis or flare of existing diagnosis
  - Initial therapy – steroids x 2 weeks
  - If responsive to steroids after two weeks – continue steroids and start SCD or immunomodulator medication
  - Steroids will be tapered when in remission (8-12 week taper)
  - Excluded from study if not in remission with steroids after 4 weeks
  - End point = steroid free remission x 1 year

# Personal Experience of Crohn's disease and SCD diet in Pediatric Patients

- - Weight loss due to limited intake; stress between child and mom
- - Patient with stricturing disease so GI doctor recommended discontinuation of diet
- - Child refusing but parents following – both parents lost 5 pounds in the first week
- - On active study – following SCD & symptom free



## Keys to patient success

- Support – they are going to do it regardless of provider input
- Close monitoring of nutritional state including growth pattern
- Provide high calorie ideas as needed
- Provide easy to use resources (websites)
- Ensure adequate vitamin/mineral intake

THANK YOU!

## References

- Crohn's & Colitis Foundation of America (2012). *The Specific Carbohydrate Diet*. Retrieved from: <http://www.ccfa.org/resources/specific-carbohydrate-diet.html>.
- Galland L (1999). *Nutritional Therapy for Crohn's Disease*. Retrieved from: <http://www.mdheal.org/crohn's.htm>.
- Gottschall E. *Breaking the Vicious Cycle: Intestinal Health Through Diet*. 13<sup>th</sup> printing: Kirkton Press Limited; 2010.
- Gottschall E (2013). The Official Website For Breaking The Vicious Cycle And The Specific Carbohydrate Diet. Retrieved from: <http://www.breakingtheviciouscycle.info>
- Suskind DL, Wahbeh G, Gregory N, et al. Nutritional Therapy in Pediatric Crohn's Disease: The Specific Carbohydrate Diet. *Journal Pediatric Gastroenterology & Nutrition*. 2014 Jan;58(1):87-91.

## References

- Cohen S, Gold B, Salvatore O, et al. Clinical and Mucosal Improvement With Specific Carbohydrate Diet in Pediatric Crohn Disease. *Journal Pediatric Gastroenterology & Nutrition*. 2014 Nov;59 (4):516-521.
- Chron's & Colitis Foundation of America (2012). *The Specific Carbohydrate Diet*. Retrieved from: <http://www.ccfa.org/resources/specific-carbohydrate-diet.html>.
- Clinical Trials.gov (2012) *Specific Carbohydrate Diet as Maintenance Therapy in Crohn's Disease*. Retrieved from: <https://clinicaltrials.gov/ct2/show/NCT01749813>



Questions?

